Journal of Neonatal Surgery
ISSN(Online): 2226-0439
Vol. 14, Issue 14s (2025)
https://www.jneonatalsurg.com

OPEN ACCESS

Ghosts of Guinea Worms: A Rare Case of Extensive Calcified Guinea Worms

Dr. Sanket Vinubhai Davra[1], Dr. Kumar Pushkar[2]

[1]MD Assistant Professor. Department of Radiodiagnosis. Dr DY Patil Medical College, Hospital and Research Centre, Pimpri

[2]PG Resident. Department of Radiodiagnosis. Dr DY Patil Medical College, Hospital and Research Centre, Pimpri

***Corresponding Author:**

Dr. Kumar Pushkar,

[2]PG Resident. Department of Radiodiagnosis. Dr DY Patil Medical College, Hospital and Research Centre, Pimpri

Emaill ID: Kumarpushkar1996@gmail.com

Cite this paper as: Dr. Sanket Vinubhai Davra, Dr. Kumar Pushkar, (2025) Ghosts of Guinea Worms: A Rare Case of Extensive Calcified Guinea Worms. *Journal of Neonatal Surgery*, 14 (14s), 897-899.

ABSTRACT

Dracunculiasis, or Guinea worm disease, is a parasitic infection caused by Dracunculus medinensis. Although eradicated in India since 2000, residual calcified worms can persist asymptomatically in affected individuals. We present a rare case of a 45-year-old male washerman from Rajasthan, India, with extensive calcified guinea worms detected incidentally during radiographic evaluation for leg pain. This case underscores the importance of recognizing characteristic radiographic features of calcified D. medinensis and highlights the enduring legacy of a once-prevalent disease.

Keywords: *Dracunculiasis,dystrophic calcification, serpiginous calcifications*

1. INTRODUCTION

Guinea worm disease (GWD) also known as Dracunculiasis, is a preventable waterborne parasitic disease affecting rural parts of developing nations of South Asia and Africa which do not have access to safe drinking water. It is thought to have existed in India for several thousand years. Banwari Lal, a 25-year-old man from the Jodhpur district in Rajasthan, was India's last reported case of guinea worm disease in July 1996. However, subsequently three more cases were reported from parts of Rajasthan.Today, GWD is seen only in some communities in remote parts of Africa. Annual number of reported cases worldwide has been declined from approximately 900,000 in 1989 to only about 3000 in the year 2009 and about 1000 in the year 2011.Asia is considered as free of disease. The disease is not fatal, but causes considerable disability. There is pain and difficulty in moving because of complications of the disease.

2. CASE PRESENTATION

A 45-year-old male washerman from a rural district in Rajasthan, India, presented to the outpatient clinic with complaints of bilateral lower limb pain and difficulty walking for the past few months. The pain was dull, intermittent, and non-radiating. There was no associated swelling, redness, or history of trauma. The patient denied systemic symptoms such as fever, weight loss, or neurological deficits. His past medical history was unremarkable, with no known comorbidities or history of similar complaints in the past. Notably, he had spent his entire life in a village that was previously endemic for Guinea worm disease prior to India’s eradication campaign.

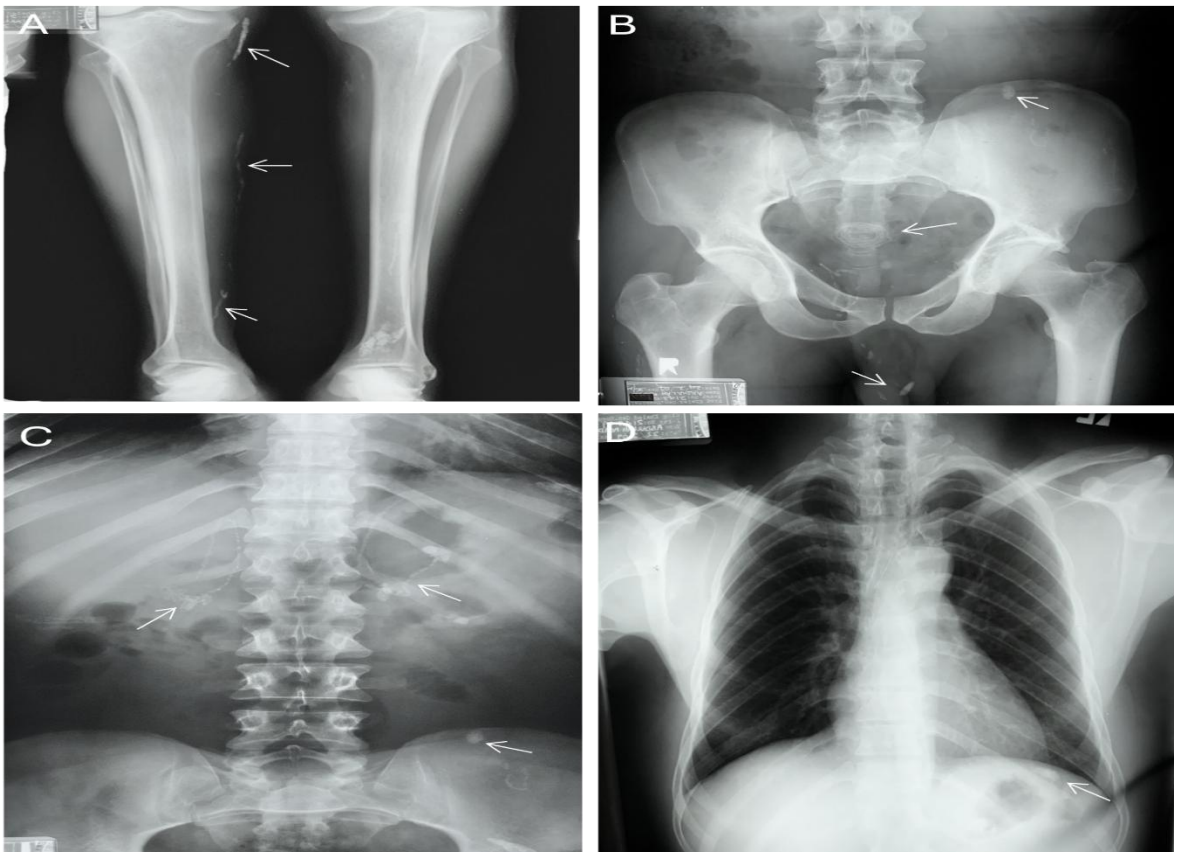
On general and systemic examination, the patient was afebrile with stable vital signs. Local examination of the lower limbs revealed no tenderness, swelling, or visible deformity. Peripheral pulses were palpable and symmetrical bilaterally. There was no limitation of joint movements or neurological deficit.

A frontal radiograph of the bilateral legs (Fig. 1A, arrows) revealed multiple curvilinear, coiled, and serpentine calcified opacities distributed within the soft tissues of both legs. These findings raised a strong suspicion of calcified guinea worm remnants (Dracunculus medinensis), prompting further imaging for systemic assessment.

Subsequent frontal radiographs of the chest (Fig. 1D), pelvis (Fig. 1B), and abdomen (Fig. 1C) demonstrated similar calcified densities in the subcutaneous tissues of the perineal region, hypogastric area, and left iliac fossa, as indicated by arrows. The largest calcified structure was measured at 20.0 cm in length. No fractures, lytic lesions, periosteal reactions, or soft tissue masses were observed. In total, radiographic imaging confirmed the presence of 35 calcified guinea worms distributed across.

multiple anatomical regions

Despite the extensive burden of calcified parasites, the patient remained largely asymptomatic apart from his nonspecific leg pain. There were no palpable nodules or overlying skin changes over the calcified areas. Hematological and biochemical investigations were within normal limits.



3. DISCUSSION

Dracunculiasis is a parasitic infection caused by Dracunculus medinensis, commonly referred to as the Guinea worm. It is transmitted through the consumption of stagnant drinking water contaminated with copepods (water fleas) that harbor infective larvae of the parasite. Once ingested, the larvae are released in the stomach, penetrate the intestinal wall, and migrate throughout the body. Fertilized female worms, which can measure between 60 to 100 cm in length, typically localize in the subcutaneous tissues—most often of the lower limbs—where they trigger blister formation and eventually emerge through the skin to release larvae into water, thus continuing the life cycle.

If the female worm fails to reach the skin surface and dies within the body, it may undergo dystrophic calcification. These calcified remnants can persist in situ for decades and may be detected incidentally during radiographic imaging for unrelated symptoms.

Radiographically, calcified guinea worms appear as long, linear, serpiginous calcifications in the subcutaneous tissues, often in the lower extremities [1]. These calcifications are typically asymptomatic and discovered incidentally during imaging for unrelated complaints. The presence of such calcifications is considered pathognomonic for prior dracunculiasis. The disease has been considered eradicated in India and much of Southeast Asia since 2000, with no indigenous cases reported since. However, residual radiological stigmata may still be encountered in patients from previously endemic regions, as exemplified by this case.

Several case reports have documented similar findings. For instance, a 50-year-old female laborer presented with back pain, and radiographs revealed serpentine calcifications in the paraspinal muscles, leading to a diagnosis of calcified guinea worm [2]. Another case involved a 60-year-old woman from Cameroon who, during a routine mammogram, was found to have coarse linear or coiled serpiginous calcifications in the breast tissue, indicative of calcified guinea worms [3]. Additionally, a 44-year-old female immigrant from Mali was found to have a calcified lesion in the distal aspect of the left thigh, characteristic of an old D. medinensis infection [4].

Another such case documented a 50-year-old female laborer who presented with persistent back pain; radiographic evaluation revealed serpiginous calcifications within the paraspinal musculature, which were suggestive of calcified Dracunculus medinensis remnants (Murali, 2004) [5]. An unusual case of a 60-year-old woman from Cameroon in whom mammographic screening revealed incidental serpentine calcifications in the breast tissue. The radiological appearance was highly indicative of an old, asymptomatic Guinea worm infection, demonstrating that calcification can persist in uncommon anatomical sites (Barry & Schucany, 2012) [6]. Similarly, Carranza-Rodríguez and Pérez-Arellano (2018) reported a 44-year-old woman from Mali who presented with pain in the left thigh. Plain radiographs revealed typical coiled calcifications in the subcutaneous soft tissues of the thigh, considered pathognomonic of healed dracunculiasis [7]. These unusual locations of calcified worms highlighted the diverse clinical presentations of residual Guinea worm disease, particularly in patients from formerly endemic regions.

These cases, along with our patient's presentation, highlight the enduring presence of calcified guinea worms in individuals from previously endemic regions. While often asymptomatic, awareness of these characteristic radiographic findings is crucial for accurate diagnosis and to avoid unnecessary interventions.

4. CONCLUSION

This case illustrates a rare and remarkable example of extensive calcified dracunculiasis in a middle-aged man, decades after the presumed eradication of active transmission in India. The characteristic radiographic appearance of serpentine, coiled subcutaneous calcifications is virtually pathognomonic for prior Dracunculus medinensis infection. Though often asymptomatic, awareness of this entity is vital to avoid unnecessary investigations or misdiagnosis, particularly in regions historically affected by the disease. Radiologists and clinicians should remain vigilant for these radiologic “ghosts” of a bygone endemic era.

REFERENCES

[1] Athavale V, Singh G, Tiwari S, Sri Sai Teja Sampath K. Guinea Worm Disease Presenting as a Subcutaneous Calcification. Cureus. 2024;16(6):e62733. Published 2024 Jun 19. doi:10.7759/cureus.62733

[2] Menon B. Serpentine calcification: A radiological stigma. J Neurosci Rural Pract. 2011;2(2):203-204. doi:10.4103/0976-3147.83599

[3] Barry SK, Schucany WG. Dracunculiasis of the breast: radiological manifestations of a rare disease. J Radiol Case Rep. 2012 Nov;6(11):29-33. doi: 10.3941/jrcr.v6i11.1137. Epub 2012 Nov 1. PMID: 23372866; PMCID: PMC3558262.

[4] Carranza-Rodríguez C, Pérez-Arellano JL. Radiological Detection of Dracunculus Medinensis. Am J Trop Med Hyg. 2018;98(5):1218-1219. doi:10.4269/ajtmh.17-0944

[5] Murali NN. Guinea worm infestation presenting as a soft tissue swelling. J. Evid. Based Med. Healthc. 2018; 5(14), 1275-1278.

[6] Barry SK, Schucany WG. Dracunculiasis of the breast: radiological manifestations of a rare disease. J Radiol Case Rep. 2012 Nov;6(11):29-33. doi: 10.3941/jrcr.v6i11.1137. Epub 2012 Nov 1. PMID: 23372866; PMCID: PMC3558262.

[7] Carranza-Rodríguez C, Pérez-Arellano JL. Radiological Detection of *Dracunculus Medinensis*. *Am J Trop Med Hyg*. 2018;98(5):1218-1219. doi:10.4269/ajtmh.17-0944